UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/827,738	04/06/2001	Richard Hans Harvey	0655/64696	6701

7590 08/12/2004	EXAMINER
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ART UNIT	PAPER NUMBER
2172	17

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _09 July 2004_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-28_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-28_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _13_.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on July 25, 2004 has been entered, in which claims

1-28 remain pending for examination.

Information Disclosure Statement

2.   The information disclosure statement (IDS) filed on 07/09/04 (Paper No. 13) complies

with the provision of MPEP 609. It has been placed in the application file. The information

referred to herein has been considered as to merits (See attached form).

Response to Arguments

3.   Applicant stated on page 3, that "Leung does not teach or suggest a method of arranging

data in a database comprising creating a second table adapted for storing data components and

having one row for each component of the data," as recited in independent claim 1. It is

respectively submitted that Leung includes the ENTRY table holds detailed information about

each directory, each record holds the system identifier of an object and an attribute value of an

attribute type of the object in both normalized and raw forms, (see page 88, lines 14-19), and see

figure 2b. Thus the arguments are not persuasive.

Applicant's arguments, see Paper No. 16, filed 7/09/04, with respect to the rejection(s) of

claim(s) 13 under 35 U.S.C. 103(a) as being unpatentable over C.M.R. Leung "GDSA: An X.500

Directory Implementation Supporting Heterogeneous Databases - 1991" (hereinafter "Leung")

have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of Paul

Barker "An Analysis of User Input to an X.500 White Page Directory Service" (hereinafter

"Barker").

Per applicant's request (July 9, 2004, Paper No. 13), the Examiner removes the cited

portions related of drawings.

Claim Rejections - 35 U.S.C. § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
>
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
>
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
>
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
>
> manner in which the invention was made.

Claims 1-12, 14-17 and 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable

over C.M.R. Leung "GDSA: An X.500 Directory Implementation Supporting Heterogeneous

Databases-1991" (hereinafter "Leung")

As per claims 1 and 14, Leung discloses, "a method of arranging data in a database" (page 85, lines 16-19) comprising:

"creating a first table adapted for storing the data and having one row for each data entry" as the DIT table holds the information of the structure of the DIT, each record contains the system identifier of an object that of its parent, (see page 88, lines 14-16). Leung does not explicitly disclose step of creating a second table adapted for storing data components and having one row for each component of the data. However, Leung discloses tow relational tables DIT and ENTRY, the ENTRY table holds detailed information about each directory, each record holds the system identifier of an object and an attribute value of an attribute type of the object in both normalized and raw forms, (see page 88, lines 17-19). It would have been obvious to one ordinary skill in the art at the time the invention was made to modify of Leung with steps of creating a second table adapted for storing data components and having one row for each component of the data. Such modification would allow the teachings of Leung to provide a complete set of operations that can only be used to manipulate objects stored in the structural part, (see Leung, page 88, lines 3-4).

As per claims 2 and 15, Leung discloses, "wherein the data is a structured data type" as the ENTRY table holds detailed information about each directory, each record holds the system identifier of an object, (see page 88, lines 17-19).

As per claims 3 and 16, Leung discloses, "wherein the data is a string data type" as the

parameters are in a form that is independent of the storage structures of both DIT and ENTRY, if

the function succeeds it returns the results if any, (see page 89, lines 18-20).

As per claim 4, Leung discloses, "wherein the data is or represents a X.509 certificate" as

DSEP decodes the request and passes the decoded request in the form of Directory Abstract

Services with the appropriate parameters to DOP, when DOP finishes processing the request and

returns the result to DSEP, DSEP encodes the results and sends it through the established

connection back to the requesting DUA, (see figure 1, page 87, lines 9-13).

As per claims 5 and 26, Leung discloses, "wherein the component data is a checksum or

fingerprint" as a means for collecting the results it passes them to DSEP in the form of directory

abstract services results, the results may be positive or negative, negative results occur when

errors are added detected during processing of the user requests, (see page 87, lines 16-20).

As per claims 6 and 23, Leung discloses, "where the database is a part of an electronic

directory services system" as the database systems used form an indispensable part of the

directory systems, (see page 85, lines 23-24).

As per claims 7 and 24, Leung discloses, "where the electronic directory services system

comprises an X.500 and LDAP services system" as an X.500 directory consists of one or more

distributed Directory System Agents where directory information is kept and user requests are

proposed, the DIT and DIB 'Directory Information' are partitioned and distributed in these DSAs

each DSA also holds knowledge of the distribution of the DIT 'Directory Knowledge', all

requests in the form of directory abstract services from directory users must be submitted

through Directory User Agents acting as the interface between the users and the X.500 directory,

DUAs use the Directory Access Protocol 'DAP' to communicate with DSAs to allow for uniform

distributed processing of user requests communication between a pair of DSAs is governed by

the Directory System Protocol, (see page 86, lines 35-44).

As per claim 8, Leung discloses, "a database having a data storage arrangement,

comprises a search table containing at least one row having a plurality of columns" as the

structural part of DIBP consists of two objects, the DIT and ENTRY stored as two relational

tables the DIT table holds the information of the structure of the DIT, each record contains the

system identifier of an object that of its parent and its RDN, the RDNs are coded in such a way

that matching them can be done efficiently, the ENTRY table holds detailed information about

each directory object, each record holds the system identifier of an object and an attribute value

of an attribute of the object in both normalized, (see page 88, lines 14-20); and

"a subsearch table containing at least one row having a plurality of columns including a

component identifier column" as the ENTRY table holds detailed information about each

directory object, each record holds the system identifier of an object and an attribute value of an

attribute of the object in both normalized, (see page 88, lines 17-19).

As per claims 9 and 10, in addition to claim 8, Leung discloses, "wherein the columns of the search table are in the form "EID, AID, VID, Norm", where EID identifies an object to which a value belongs, AID identifies an attribute type of the value, and VID identifies one of a possible number of attribute values in the one entry, and CID identifies the component identifier" as the ENTRY table holds detailed information about each directory object, each record holds the system identifier of an object and an attribute value of an attribute type of the object in both normalized and raw forms, (see page 88, lines 15-19).

As per claim 11, in addition to claim 8, Leung further discloses, "a subattribute table containing at least one row having a plurality of columns in which a description or reference to the subsearch table is provided" as the ENTRY table holds detailed information about each directory object, each record holds the system identifier of an object and an attribute value of an attribute of the object in both normalized, (see page 88, lines 17-19).

As per claim 12, in addition to claim 11, Leung discloses, "wherein the columns of the subattribute table are in the form 'CID, SYN, DESC, OBJECT ID, FLAGS'", (see figure 4b, page 88, lines 14-18).

As per claim 17, Leung discloses, "a system, being an X.500 or LDAP directory services system" as an X.500 directory consists of one or more distributed Directory System Agents (DSAs) where directory information is kept and user requests are proposed, the DIT and DIB (Directory Information) are partitioned and distributed in these DSAs each DSA also holds

knowledge of the distribution of the DIT (Directory Knowledge), all requests in the form of

directory abstract services from directory users must be submitted through Directory User

Agents acting as the interface between the users and the X.500 directory, DUAs use the

Directory Access Protocol (DAP) to communicate with DSAs to allow for uniform distributed

processing of user requests communication between a pair of DSAs is governed by the Directory

System Protocol (DSP), (see page 86, lines 35-44).

As per claim 22, in addition to claim 1, Leung discloses, "determining a component of a

given data entry" as adds a new entry, (see page 89, line 6);

"executing one of an exact or initial matching on the second table in order to locate the

component" as the RDNs are coded in such a way that matching them can be done efficiently,

(see page 88, lines 15-19); and

"returning the given data entry matching the component located" as each record holds the

system identifier of an object and an attribute value of an attribute type of the object in both

normalized and raw form, the normalized values allow efficient value matching of all attribute

types through the use of standard SQL query language, (see page 88, lines 15-20).

As per claim 25, in addition to claim 4, Leung discloses, "a check sum of the data and or

a fingerprint of the data" as a means for collecting the results it passes them to DSEP in the form

of directory abstract services results, the results may be positive or negative, negative results

occur when errors are added detected during processing of the user requests, (see page 87, lines

16-20).

As per claim 27, Leung discloses a method, "wherein the search is conducted using a search table to locate the fingerprint or checksum" as a means for collecting the results it passes them to DSEP in the form of directory abstract services results, the results may be positive or negative, negative results occur when errors are added detected during processing of the user requests, (see page 87, lines 16-20).

As per claim 28, Leung further discloses, "wherein components of the checksum or fingerprint are searched" as a means for collecting the results it passes them to DSEP in the form of directory abstract services results, the results may be positive or negative, negative results occur when errors are added detected during processing of the user requests, (see page 87, lines 16-20).

5.   Claims 13 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over C.M.R. Leung "GDSA: An X.500 Directory Implementation Supporting Heterogeneous Databases-1991" (hereinafter "Leung") in view of Paul Barker "An Analysis of User Input to an X.500 White Page Directory Service" – 1995, (hereinafter "Barker").

As per claims 13 and 18, in addition to claim 1, Leung discloses the claimed subject matter except the claimed a third table directed to one or more selected components of values and configured to have one row for each component of each value. However, Barker discloses table III gives a breakdown of how the data matched these categories, (see table III, page 116,

lines 5-6), and page 113, col. 1, paragraph 3 to col. 2, paragraph 2. It would have been obvious

to one ordinary skill in the art at the time the invention was made to modify the combined

teachings of Leung and Barker with a third table directed to one or more selected components of

values. Such modification would allow the teachings of Leung and Barker to improve the

accuracy of the directory searching methods and systems; and to provide alternative names for

directory entries, (see page 124, paragraph 4, lines 4-5).

As per claim 19, Leung discloses, "wherein the data is a structured data type" as the

parameters are in a form that is independent of the storage structure of both DIT and ENTRY,

(see page 89, lines 18-19).

As per claim 20, Leung discloses, "wherein the data is a string data type" as the

parameters are in a form that is independent of the storage structure of both DIT and ENTRY if

the function succeeds it returns the results if any, (see page 89, lines 18-20).

As per claim 21, Leung discloses, "being an X.500 or LDAP directory services system"

as an X.500 directory consists of one or more distributed Directory System Agents where

directory information is kept and user requests are proposed, the DIT and DIB (Directory

Information) are partitioned and distributed in these DSAs each DSA also holds knowledge of

the distribution of the DIT 'Directory Knowledge', all requests in the form of directory abstract

services from directory users must be submitted through Directory User Agents acting as the

interface between the users and the X.500 directory, DUAs use the Directory Access Protocol

'DAP' to communicate with DSAs to allow for uniform distributed processing of user requests

communication between a pair of DSAs is governed by the Directory System Protocol (DSP);

(see page 86, lines 35-44).

Prior Art

6.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

    C.M.R. Leung "An Object-Oriented Approach to Directory Systems" – 1990.

    [Remainder of page intentionally left blank]

CONTACT INFORMATION

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jean B Fleurantin whose telephone number is 703-308-6718.
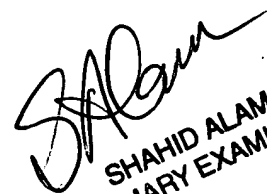
The examiner can normally be reached on 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John B Breene can be reached on 703-305-9790. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jean Bolte Fleurantin

July 30, 2004

SHAHID ALAM
PRIMARY EXAMINER